

REMARKS

Basis for the amendments to the independent claims can be found in Tables 1 and 2 on page 46.

It is respectfully submitted that the rejections of claims under 35 U.S.C. 103 over Yamada alone or in combination with other references should not be continued.

The independent claims, as amended, relates to a flame-retardant thermoplastic resin composition in which a plant derived resin is combined with a flame retardant of which 90% or more is composed of a metal hydrate containing an alkali metal-based substance in an amount of 0.18% or less.

The Yamada reference was cited to show a flame retardant having an impurity level of 0.5% or less. There is no specific disclosure of 0.18% or less impurity level, and the impurity in the reference can be iron oxide or silicon oxide in addition to sodium oxide. The Declaration submitted heretofor establishes that the impurity level in the species actually disclosed in this reference was greater than 0.2%.

As the Examiner has pointed out, Yamada teaches at a purity level of about 99.5% is preferred because the shelf stability is improved relative to a lower purity level. There are two significant points to be observed with respect to that teaching. First, there is no teaching or suggestion that the impurity level effects fire retardancy. Second, there is no teaching or suggestion in the reference that there is any shelf stability increase at purity levels above 99.5%. The Examiner has taken the position that this teaching would have motivated one skilled in the art to achieve a purity level of 99.5% in order to have an improved shelf stability and that the stability property would get better as the level of

impurities decreases. Applicants generally agree but respectfully disagree with the implicit assertion that the person skilled in the art would have a reason to believe the stability would increase further when the purity exceeded 99.5%. Nothing in Yamada teaches or suggests that the stability would be any different at a purity of 99.6% rather than 99.5%. Obviousness cannot be predicated on silence. *In re Newell*, 13 USPQ2d 1248, 1250 (Fed. Cir. 1989)(“Obviousness cannot be predicated on what is unknown.”), *In re Burt*, 148 USPQ 548, 553 (CCPA 1966)(silence does not provide a factual basis on which a conclusion of obviousness may be drawn).

The silence in Yamada is significant because, as Examiner correctly pointed out previously, the cost of purification is a relevant consideration, and the person skilled in the art would seek to obtain a balance between purification cost and shelf stability of the metal hydrate. As pointed out in the Declaration of record, both the difficulty and cost of purification increases as the purity is increased beyond 99.5%. The task of reducing the impurities beyond 0.5% is both difficult and costly. There is no reason to undertake that task unless there is some shelf stability advantage to be realized. But here, Yamada teaches that a purity of 99.5% is more than adequate, and does not teach a purity of say 99.7% is any better than 99.5%. If anything, the silence indicates that a purity of 99.7% is effectively the same as that at 99.5%. What rationale would give the artisan a reasonable expectation of realizing any advantage if a difficult and costly further purification was undertaken. Nothing suggests that any advantage could be realized by reducing the impurity level to 0.18 % or less, much less an advantage which cannot be predicted from the teachings of Yamada.

The Advisory Action comments that the fact that something would not be done

by a business man for economic reasons does not mean a skilled person would not do that thing because of some technical advantage. It is respectfully submitted that this comment is inapposite for two reasons. First, the increase in purification here is not merely an economic concern, but is also technically difficult. Second, what technical advantage? As discussed above, shelf stability is the only advantage mentioned in the reference and nothing suggests an advantage in that property can be realized by reducing the alkali metal content to 0.18% or less.

Nothing in Yamada teaches or suggests that the amount of alkali metal based substance contained in the metal hydrate purity level effects the fire retardancy. Tables 1 and 3 - 10 and Figure 1 show that when the impurity level was 0.18% or less, the UL94 classification was either V1 or V0 but when the impurity level was 0.22%, the rating was V2. This is a dramatic and unpredictable change in flammability realized by a difference of only 0.04% in the alkali metal content (0.18% to 0.22%), and this is reflected in the drastic change in slope between these data points in Figure 1. As stated in the Declaration, these results are unpredictable and are surprising and unexpected.

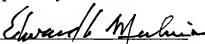
The Advisory Action also states that the evidence of unexpected results must be commensurate in scope with the claims. It is respectfully submitted that the range of alkali metal content in the showing (0.05-0.18%) is fully commensurate in scope with the 0.18% or less scope of the claims, as amended.

In light of the foregoing considerations, it is respectfully submitted that any rejection based on Yamada is rejection is not tenable.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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